Committee on Agriculture
U.S. House of Representatives

Hearing on

Review of the Renewable Fuels Market

Testimony of

Bob Dinneen
President
Renewable Fuels Association

June 29, 2006

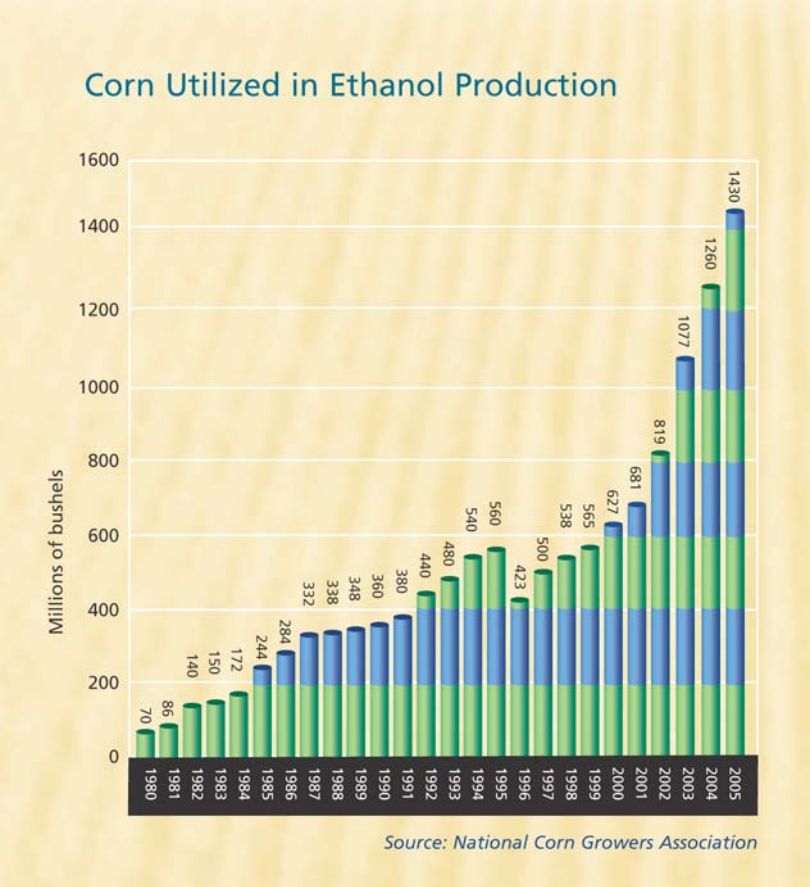
Good morning, Mr. Chairman and Members of the Committee. My name is Bob Dinneen and I am president of the Renewable Fuels Association, the national trade association representing the U.S. ethanol industry.

This is an important and timely hearing, and I am pleased to be here to discuss the unprecedented growth in the domestic ethanol industry, and the attendant economic, energy and environmental benefits resulting from that growth. Ethanol today is the single most important value-added market for farmers. The rapidly increased demand for grain used in ethanol processing has increased farm income, created jobs in the agricultural sector, and revitalized numerous rural communities where ethanol biorefineries have been located.

Background

Today's ethanol industry consists of 101 biorefineries located in 19 different states with the capacity to process more than 1.7 billion bushels of grain into nearly 4.8 billion gallons of high octane, clean burning motor fuel and 9 million metric tons of livestock and poultry feed. It is a dynamic and growing industry that is revitalizing rural America, reducing emissions in our nation's cities, and lowering our dependence on imported petroleum.

Ethanol has become a ubiquitous component of the U.S. motor fuel market. Today, ethanol is blended in more than 40% of the nation's fuel, and is sold virtually from coast to coast and border to border.



In 2005, the U.S. ethanol industry consumed more than 1.4 billion bushels of corn in the production of 4 billion gallons of ethanol. That represents approximately 12% of last year's 11 billion bushel crop. The industry also used 55 million bushels of sorghum, or about 14% of that crop. Finally, ethanol is produced from a variety of agricultural waste products, including cheese whey, beer and beverage waste.

The 4 billion gallons of ethanol produced and sold in the U.S. last year contributed significantly to the nation's economic, environmental and energy security. According to an analysis completed for the RFA[1], the 4 billion gallons of ethanol produced in 2005 resulted in the following impacts:

- Added $32 Billion to gross output;
- Created 153,725 jobs in all sectors of the economy;
- Increased economic activity and new jobs from ethanol increased household income by $5.7 Billion, money that flows directly into consumers' pockets;
- Contributed $1.9 Billion of tax revenue for the Federal government and $1.6 Billion for State and Local governments; and,
- Reduced oil imports by 170 million barrels of oil, valued at $8.7 Billion.

[1] *Contribution of the Ethanol Industry to the Economy of the United States*, Dr. John Urbanchuk, Director, LECG, LLC, February, 2006.

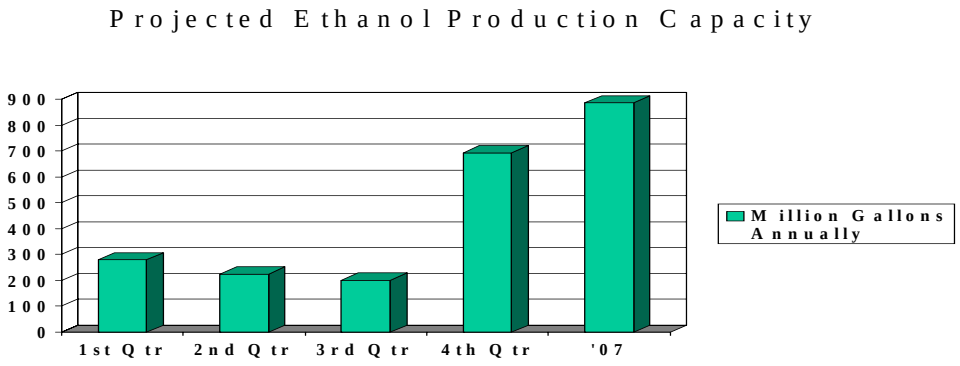
In addition, because the crops used in the production of ethanol absorb carbon dioxide, the 4 billion gallons of ethanol produced in 2005 reduced greenhouse gas emissions by nearly 8 million tons.[2] That's the equivalent of taking well over a million vehicles off the road.

As the industry has grown, it has also changed. Today, the single largest ethanol producer, taken as a whole, is the farmer-owned ethanol plant.

Energy Policy Act Has Stimulated Significant New Ethanol Production

Mr. Chairman, in large part because of the Energy Policy Act of 2005 (EPAct), the U.S. ethanol industry is today the fastest growing energy resource in the world. As you know, EPAct included an historic new direction for U.S. energy policy, requiring refiners to utilize an increasing percentage of renewable fuels. The Renewable Fuels Standard (RFS) began in January and requires refiners to utilize at least 4 billion gallons of ethanol and/or biodiesel this year. The RFS gradually increases to at least 7.5 billion gallons of renewable fuels by 2012. The RFS has been a clarion call to the ethanol industry and the financial community that demand for ethanol and biodiesel was no longer uncertain, allowing the renewable fuels industry to grow with confidence.

Indeed, there are currently 41 plants under construction or expansion. Twenty-seven of those have broken ground just since last August when President Bush signed EPAct into law. The industry expects more than 2.2 billion gallons of new production capacity to be in operation within the next 12 to 18 months. The following is our best estimate of when this new production will come on stream.



This preceding chart reflects the plants and expansions brought on line so far this year, representing more than 500 million gallons of production capacity; and another 16 plants and 2 expansions that will be completed before the end of the year, adding about 900 million gallons more. This new 1.4 billion gallons of new capacity represents a 32% increase in production, a phenomenal rate of growth, particularly when viewed in light of the 20-plus percent growth the industry has already achieved in each of the past several years.

[2] Argonne National Laboratory, U.S. Department of Energy, GREET Model, February, 2006.

Rapidly Increasing Demand

While ethanol supply is growing exponentially, ethanol demand is increasing as well. Indeed, ethanol demand in 2006 is significantly higher than that required by EPAct. The reason for that is refiners chose to eliminate the use of MTBE in many of the reformulated gasoline areas where it had not already been removed.[3] Those areas include the Mid-Atlantic, New England and Texas. The Energy Information Administration estimated about 130,000 barrels per day of ethanol was needed to replace MTBE in those areas.

The transition from MTBE to ethanol in these areas is now largely complete. Increased demand for ethanol was met by building stocks, increasing production capacity and incremental imports. The transition clearly presented logistical challenges, but the marketplace responded and assured success. The ethanol industry, refiners and gasoline marketers worked collaboratively to meet the challenge of MTBE replacement.

The fuel distribution network also played a role in the successful transition. Over the past several years, the ethanol industry has worked to expand a "Virtual Pipeline" through aggressive use of the rail system, barge and truck traffic. As a result, we can move product quickly to those areas where it is needed. Many ethanol plants have the capability to load unit trains of ethanol for shipment to ethanol terminals in key markets.

New Technologies

The only thing more astonishing than the growth in the ethanol industry is the technological revolution happening at every biorefinery and every ethanol construction site across the country. Plants today are using such innovations as no-heat fermentation, corn fractionization and corn oil extraction. With today's natural gas prices, plants are also looking toward new energy sources, including methane digesters and biomass gasification. In short, the ethanol industry is unrecognizable from what it was just five years ago, and it will be unrecognizable again five years from now.

To continue this technological revolution, however, continued government support will be critically important. DOE's biomass and biorefinery systems research and development program has been essential to developing new technologies. Competitively awarded grants provided by this program have played a very important role in developing new technology.

Recently, DOE informed the renewable fuels industry that it was canceling research contracts. Many of the grants provide technologically promising projects that would help move the industry forward. The RFA encourages Congress to continue to provide additional funds for competitive solicitations.

---

[3] It is important to note that no provision of the Energy Policy Act or the Clean Air Act requires refiners to eliminate MTBE, nor are they required to use ethanol. This is a decision refiners are making because replacing MTBE with ethanol is the most cost-effective means of meeting Clean Air Act standards while maintaining the octane and performance consumers expect.

New Feedstocks

To date, the ethanol industry has grown almost exclusively from grain processing. In the future, ethanol will be produced from other feedstocks, such as cellulose. Cellulose is the main component of plant cell walls and is the most common organic compound on earth. However, it is more difficult to break down cellulose and convert it into usable sugars for ethanol. Yet, making ethanol from cellulose dramatically expands the types and amount of available material for ethanol production. This includes many materials now regarded as wastes requiring disposal, as well as corn stalks, rice straw and wood chips or "energy crops" of fast-growing trees and grasses. Cellulosic ethanol production will augment, not replace, grain-based ethanol, but ultimately exponentially expand potential ethanol supplies.

Many companies are working to commercialize cellulosic ethanol production. Indeed, there is not an ethanol biorefinery in production today that does not have a very aggressive cellulose ethanol research program. The reason for this is that they all have cellulose already coming into the plant. If they can process that material into ethanol, they will have a significant marketplace advantage.

Many companies are working to commercialize cellulosic ethanol. Iogen, Inc., a Canadian enzyme company, has been producing cellulosic ethanol from wheat straw since 2004 at a one million gallon plant in Ontario. The company is planning to begin construction of a commercial facility in the U.S. during the summer of 2007. Abengoa Bioenergy Corp., which operates four biorefineries in the U.S. today, has begun construction of a grain and cellulose ethanol plant in Spain. The company plans to bring that technology to the U.S. as soon as the technology is proven successful. Numerous other companies are moving toward commercialization and I am confident cellulosic ethanol will be a reality quite soon.

New Markets

Ethanol today is largely a blend component with gasoline, adding octane, displacing toxics and helping refiners to meet Clean Air Act specifications. But the time when ethanol will saturate the blend market is on the horizon, and the industry is looking forward to new market opportunities such as E-85 and ethanol fuel cells.

Today there are approximately 5 million flexible fuel vehicles (FFVs) on the road capable of using E-85, a mix of 85% ethanol and 15% gasoline. There are about 600 E-85 refueling stations across the country. Frankly, we can and must do better.

Five million FFVs represent less than 2% of the total U.S. motor vehicle fleet. This year, the U.S. will purchase about 17 million vehicles. Approximately 800,000, or roughly 3% of those, will be FFVs. In contrast, more than 60% of the vehicles produced and sold in Brazil this year will be FFVs.

Clearly, U.S. auto manufacturers have made a significant commitment to FFV technology, and their commitment is increasing. Ford, General Motors and DaimlerChrysler have made significant strides in producing and promoting FFVs. But we can do better.

As FFV vehicles are commercialized, it is important to encourage the most efficient technologies. Some FFVs today experience a reduction in mileage when ethanol is used because of the difference in BTU content compared to gasoline. But that debit can be addressed. General Motors has introduced a turbo-charged SAAB that experiences NO reduction in fuel efficiency when ethanol is used. That's the kind of innovation the government should be rewarding in any program designed to encourage E-85 use.

Of course, FFVs will be wasted without a commensurate increase in E-85 fuel availability. Reforms of the ethanol tax incentive have made it much easier for ethanol producers to work with gasoline marketers directly to promote E-85. Ethanol producers such as Chippewa Valley Ethanol Company (CVEC) and VeraSun have moved aggressively to market E-85. As a result, there was more E-85 sold last year than ever,[4] and sales continue to grow.

Still, convincing gasoline marketers to sell E-85 under their canopies remains a challenge. Today, only about 600 of the 170,000 gasoline stations nationwide sell E-85. That's not enough. Incentives to encourage gasoline marketers to invest in the necessary infrastructure may be necessary move this market forward.

In the final analysis, many things have to happen for E-85 to become a more consequential component of the U.S. motor fuel marketplace. There must be more vehicles. There must be more refueling pumps. And there must be more ethanol to supply this market, which likely means cellulosic ethanol capacity. But the need to develop meaningful alternatives to gasoline has never been more apparent. And we must invest now, or that future will never materialize.

Conclusion

In his State of the Union Address, President Bush acknowledged the nation "is addicted to oil" and pledged to greatly reduce our oil imports by increasing the production and use of domestic renewable fuels such as ethanol and biodiesel. The Energy Policy Act of 2005 clearly put this nation on a new path toward greater energy diversity and national security through the RFS. Additional and more focused research, targeted incentives for E-85 vehicles and refueling infrastructure, and the continued commitment of this Committee will make the President's vision of a more energy secure America a reality.

Thank you.

[4] In Minnesota alone, the only state for which there is reliable data, approximately 8 million gallons of E-85 were sold in 2005. About 200 E-85 stations are located in Minnesota.